## **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

- 1. (Cancel)
- 2. (Currently Amended) The method of <u>claim 3</u> elaim 1, further including adjusting a printer parameter to optimize said printer for said cartridge based on said comparison.
- 3. (Currently Amended) The method of claim 1 In an ink jet printer comprising a printhead cartridge, said printhead cartridge having a printhead comprising a plurality of jets thereto a method of testing said printhead, said method comprising:

storing in a memory element on said printhead cartridge a first set of jet characteristics of said printhead, wherein said first set of characteristics is indicative of the performance of said plurality of jets;

testing said printhead cartridge to generate a second set of jet characteristics, wherein said first and second set of characteristics are resistance values of resisters on said printhead; and

comparing said second set of jet characteristics with said first set of jet characteristics.

- 4. (Original) The method of claim 3, wherein said first set of characteristics comprises at least maximum and minimum expected resistance values.
- 5. (Original) The method of claim 4, wherein said second set of characteristics comprises resistance values for a plurality of jet resistors.
- 6. (Original) The method of claim 5, wherein comparing said second set of characteristics with said first set of characteristics includes comparing the

resistance of a jet resistor with the maximum and minimum expected resistance value for the jet resistors.

- 7. (Original) The method of claim 4, wherein said first set of characteristics is stored during the manufacturing process of said printhead cartridge.
- 8. (Original) The method of claim 5, wherein said printhead cartridge is tested upon installation in said printer to generate said second set of characteristics.
- 9. (Currently Amended) The method of <u>claim 3</u> elaim 1, wherein said first and second set of characteristics are capacitance and/or resonance frequencies of piezo elements on said printhead.
- 10. (Original) The method of claim 9, wherein said first set of characteristics comprises at least maximum and minimum expected capacitance values.
- 11. (Original) The method of claim 10, wherein said second set of characteristics comprises capacitance values for a plurality of jet piezo elements.
- 12. (Currently Amended) The method of <u>claim 3 elaim 1</u>, wherein said first and second set of characteristics are selected from the group consisting of: dot quality, line quality, drop quality or color-to-color alignment.
- 13. (Currently Amended) The method of <u>claim 3</u> elaim 1, wherein the printhead cartridge resides on a movable carriage.
- 14. (Currently Amended) The method of <u>claim 3</u> elaim 1, wherein said second set of characteristics is compared with said first set of characteristics to determine if said printer is optimized for said cartridge.
  - 15. (Previously Presented) A printhead cartridge comprising:

a housing;

a printhead mounted to said housing and including a plurality of jets thereon; and

an integrated circuit mounted to the housing, said integrated circuit comprising a memory element, wherein said memory element stores at least one set of jet characteristics, including maximum and minimum resistance values of resisters on said printhead.

- 16. (Cancel)
- 17. (Cancel)
- 18. (Currently Amended) The printhead cartridge of claim 15, further containing a plurality of electrical contacts configured to electrically connect said integrated circuit with a processor, wherein said processor compares said a second set of jet characteristics with said first at least one set of jet characteristics.
  - 19. (Previously Presented) A printhead cartridge comprising: a housing;
- a printhead mounted to said housing and including a plurality of jets thereon; and

an integrated circuit mounted to the housing, said integrated circuit comprising a memory element, wherein said memory element stores at least one set of jet characteristics, including capacitance and/or resonance frequencies of piezo elements on said printhead.

- 20. (Previously Presented) A printhead cartridge comprising: a housing;
- a printhead mounted to said housing and including a plurality of jets thereon; and

an integrated circuit mounted to the housing, said integrated circuit comprising a memory element, wherein said memory element stores at least one set of jet characteristics, including at least expected capacitance values for piezo elements on said printhead.

21. (Previously Presented) A printhead cartridge comprising: a housing;

a printhead mounted to said housing and including a plurality of jets thereon; and

an integrated circuit mounted to the housing, said integrated circuit comprising a memory element, wherein said memory element stores at least one set of jet characteristics, including resonance frequency values for piezo elements on said printhead.

- 22. (Original) The printhead cartridge of claim 15, wherein said at least one set of characteristics comprises characteristics selected from the group consisting of: dot quality, line quality, drop quality or color-to- color alignment.
  - 23. (Original) A printer comprising:
  - a cartridge, said cartridge comprising:
  - a housing;
- a printhead mounted to said housing and including a plurality of jets thereon;

an integrated circuit mounted to housing, said integrated circuit comprising a memory element, wherein said memory element stores a first set of characteristics of said plurality of jets, wherein said first set of characteristics comprises maximum and minimum expected resistance values of resistors on said printhead cartridge;

a memory, wherein said memory stores a second set of characteristics of the plurality of jets, wherein said second set of characteristics comprises measured resistance values for the plurality of jet resistors; and

a processor connected to the integrated circuit by a plurality of electrical contacts, wherein said processor compares said second set of characteristics with said first set of characteristics.

24. (Original) A method of detecting malfunctioning jets of an ink jet printhead cartridge comprising:

storing at least one jet resistance value in a memory on said cartridge, and comparing a measured resistance value to said stored value.

25. (Previously Presented) A printhead cartridge comprising: a housing;

a printhead mounted to said housing and including a plurality of jets thereon; and

an integrated circuit mounted to the housing, said integrated circuit comprising a memory element, wherein said memory element stores at least one set of resistance values of resisters on said printhead, said at least one set of resistance values comprising a first set of characteristics including maximum and minimum expected resistance values for resistors on said printhead.

## 26. (Cancel)

27. (Original) In an ink jet printer comprising a printhead cartridge, said printhead cartridge having a printhead comprising a plurality of jets thereto a method of testing said printhead, said method comprising:

storing in a memory element a first set of jet characteristics comprising a plurality of resistance values for resistors on said printhead, wherein said first set of characteristics is indicative of the performance of said plurality of jets;

testing said printhead cartridge to generate a second set of jet characteristics comprising a plurality of resistance values for said resistors;

comparing said second set of jet characteristics with said first set of jet characteristics; and

adjusting a printer parameter to optimize said printer for said cartridge based on said comparison.

- 28. (Original) A printer comprising:
- a cartridge, said cartridge comprising:
- a housing;
- a printhead mounted to said housing and including a plurality of jets thereon, wherein each jet has a piezo element;

an integrated circuit mounted to housing, said integrated circuit comprising a memory element, wherein said memory element stores a first set of characteristics of said plurality of jets, wherein said first set of characteristics comprises expected capacitance values for the piezo elements on said printhead;

a memory, wherein said memory stores a second set of characteristics of the plurality of jets, wherein said second set of characteristics comprises measured capacitance values for the piezo elements on said printhead; and

a processor connected to the integrated circuit by a plurality of electrical contacts, wherein said processor compares said second set of characteristics with said first set of characteristics.

## **Discussions Concerning the Drawings:**

Formal drawings are submitted herewith under Separate Letter to the Draftsperson. For the convenience of the Examiner, a copy of the formal drawings is enclosed with this amendment.